

REMARKS

This paper is responsive to any paper(s) indicated above, and is responsive in any other manner indicated below.

PENDING CLAIMS

Claims 1-20 were pending, under consideration and subjected to examination in the Office Action. Appropriate claims have been amended, canceled and/or added (without prejudice or disclaimer) in order to adjust a clarity and/or focus of Applicant's claimed invention. That is, such changes are unrelated to any prior art or scope adjustment and are simply refocused claims in which Applicant is present interested. At entry of this paper, Claims 1-20 will be pending for further consideration and examination in the application.

REJECTION UNDER 35 USC '103

All 35 USC '103 rejections are respectfully traversed. However, such rejections have been rendered obsolete by the present clarifying amendments to Applicant's claims, and accordingly, traversal arguments are not appropriate at this time. However, Applicant respectfully submits the following to preclude renewal of any such rejections against Applicant's clarified claims.

All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated hereat by reference. Further, all Office Action statements regarding the prior art rejections are

respectfully traversed. As additional arguments, Applicant respectfully submits the following.

In order to properly support a §103 obviousness-type rejection, the reference not only must suggest the claimed features, but also must contain the motivation for modifying the art to arrive at an approximation of the claimed features. However, the cited art does not adequately support a §103 obviousness-type rejection because it does not, at minimum, disclose (or suggest) the following limitations of Applicant's clarified claims.

Applicant's disclosed and claimed invention is directed to map generation arrangements (e.g., devices, methods, computer-implemented programs) which improve an accuracy of map generation, while at a same time, lessen work required of a person (e.g., user) using the map generation arrangements. More particularly, the inventors found that if mapping generation was conducted purely automatically, significant errors were present in maps resultant from the automated approach. That is, as one example, in forming a map from an ariel view, an automated system cannot discriminate between a cement patio and white-rubberized roof, i.e., often the cement patio is detected as a building. The same can happen with dark rectangular parking lots.

In short, the human eye and intuitiveness has much better accuracy at recognizing building structures than purely automated systems. On the other side of the coin, it is too burdensome to require that a user carefully define all of the peripheral boundaries of each building. Applicant's invention provides improvement by combining user discrimination of building regions together with significant automation. More particularly, with building recognition with Applicant's invention, a

user must first designate at least one position of a portion (e.g., a roof) of a building. Thereafter, units (e.g., a polygon extraction unit, vector generation unit) automatically use the at least one position to detect the building region (e.g., roof outline). By using slight human intervention, accuracy is greatly increased.

Once a user designates a building region, Applicant's disclosed and claimed invention utilizes automated processing arrangements providing improved accuracy map generation. A portion of such arrangements are claimed (using independent claim 1 as an example) as: **"using a structural analysis and integration unit to detect a boundary of the building region and lines inside the building region, and to compare between a shape of detected lines and a predetermined shape pattern of cross lines; wherein the structural analysis and integration unit estimates the building region based on the compared shape of the detected lines in a case where the lines inside the building region correspond to any predetermined integration patterns, and terminates a process for integrating the building structure in a case where there exist no lines corresponding to any of the integration patterns, and wherein the generating a vector operation generates a vector of the polygon line of the extracted building region estimated by the structural analysis and integration unit."** Other ones of Applicant's independent claims beyond independent claim 1, contain similar or analogous features and limitations.

Regarding rebuttal of the applied art, at minimum, neither of Byong and Frederick disclose or suggest the above-emphasized feature/limitations of Applicant's clarified claims, and accordingly, it is respectfully submitted that Byong

and Frederick, whether taken alone, or in combination, would have suggested Applicant's claimed invention.

In addition to the foregoing, the following additional remarks from Applicant's foreign representative are also submitted in support of traversal of the rejection and patentability of Applicant's claims.

Some important features of Applicant's invention are:

1) an arrangement for discriminating a similarity in gray level to extract building region having a similar color and detecting boundary of the building region (executed by the polygon extraction unit 204);

2) an arrangement for detecting lines inside the building region extracted based on the similarity in gray level (step 1401) and estimating the building region based on the comparing result between shape of the detected lines and a predetermined shape pattern of the cross-lines (step 1403 and FIGs. 15 and 16); and

3) an arrangement for generating a vector of the polygon line of the extracted building region estimated in the integration processing.

According to Applicant's invention, extracting the building region based on the distribution histogram of gray level and the building structural knowledge is executed. Therefore, a building region is extracted correctly for generating a map from the aerial photograph, when a building having a gable roof which has a different color (gray contrast sunlight falls different angles) and different structure, or a building having a structure such as an exhaust tower on it.

Regarding differences between the applied art, the cited documents (Byong and Frederick) do not disclose or suggest the aforementioned features 1), 2) and 3)

of Applicant's invention. Especially, both of Byong and Frederick do not disclose process of integrating the building region. Therefore, Applicant's invention is not obvious from two applied documents because Applicant's invention has a different formation and effect from the cited documents.

It is respectfully noted that Office Action comments allege the limitation of claim 8, which is claiming the processing of integrating the building region, is disclosed in Byong. In traversal, Fig. 1(a) of Byong only discloses an imaging structure by using depth information showing a gray level of surface. Byong does not disclose detecting lines inside a building region and estimating the building region based on building structural knowledge.

Further, Frederick does not disclose generating a map based on information showing a gray level and the building structural knowledge, but discloses only technique for detecting cross-lines to draw a line.

As a result of all of the foregoing, it is respectfully submitted that the applied art (taken alone and in the Office Action combinations) would not support a '103 obviousness-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such '103 rejection, and express written allowance of all of the '103 rejected claims, are respectfully requested.

EXAMINER INVITED TO TELEPHONE

The Examiner is herein invited to telephone the undersigned attorneys at the local Washington, D.C. area telephone number of 703/312-6600 for discussing any Examiner's Amendments or other suggested actions for accelerating prosecution and moving the present application to allowance.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer. That is, any above statements, or any present amendment or cancellation of claims (all made without prejudice or disclaimer), should not be taken as an indication or admission that any objection/rejection was valid, or as a disclaimer of any scope or subject matter. Applicant respectfully reserves all rights to file subsequent related application(s) (including reissue applications) directed to any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to any/all limitations/features not yet claimed, i.e., Applicant continues (indefinitely) to maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims listed above as presently being under consideration in the application are now in condition for allowance.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR 1.136. Authorization is herein given to charge any shortage in the fees, including extension of time fees and excess claim fees, to Deposit Account No. 01-2135 (Case No. 1213.43404X00) and please credit any excess fees to such deposit account.

Based upon all of the foregoing, allowance of all presently-pending claims is respectfully requested.

Respectfully submitted,

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